Original Research Paper

Changing Pattern and Prevalence of Breast Cancer in Al – Kadhymia Teaching Hospital / Baghdad

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ABSTRACT:
Background: Breast cancer represent 10%of all cancers diagnosed worldwide. The number of cases worldwide has significantly increased since the 1970s, and in2004, breast cancer caused 519,000 deaths worldwide (7% of cancer deaths; almost 1% of all deaths) **Aim of the study**: To estimate the prevalence of breast cancer during years (2004-2010) To estimate the effect of risk factors on the occurrence of Breast cancer, especially the effect of stressful life events in Iraq. **Patients and methods**: Retrospective cross sectional study was done in Al- Kadhimya Teaching Hospital / Baghdad during the period from June.2004 to June.2010 on 196 patients diagnosed to have breast cancer and had mastectomy operations .After history ,examination required investigation were done ,special attention was given to the risk factors especially history of stressful life events. **Results**: there was a significant increase in the number of mastectomy operations when compare cases in 2005, in which there was 20 mastectomies to 42 mastectomies in 2010 while the total number of operations in the same period was (1590) operations in 2005 and increased to (1955) operations in 2010. **Conclusions**: The definite rise in the number and the decreased age of presentation of breast cancer could be due to increasing stressful life conditions affecting Iraqi population. There is a statistical significant association between occurrence of breast cancer and parity, obesity, stressful health event, family history, age of menarche

Keywords: Breast cancer, Risk factors, Baghdad.

INTRODUCTION:

Breast cancer represent 10% of all cancers diagnosed worldwide with an incidence rate more than twice that of large bowel cancer and cervical cancer and about three times that of lung cancer. However breast cancer mortality worldwide is just 25% greater than that of lung cancer in women.[1] In 2004, breast cancer caused 519,000 deaths worldwide (7% of cancer deaths; almost 1% of all deaths).[2] The number of cases worldwide has significantly increased since the 1970s, a phenomenon partly blamed on modern lifestyles in the Western world.[3][4] The incidence rates are increasing in all countries with available statistics, and since women are at risk from the ages of late 30's, the impact of the disease is magnified.[5] According to the Regional Office database and data from many countries of the region [6,7,8] the breast cancer is the most common malignancy in the region comprising 12-30% of all cases There is a wide variation in the spectrum of breast diseases and the epidemiology of breast carcinoma in various countries or ethnic groups.[3,6] In USA, it was found that 1 from 4 cancers are breast cancers.[8] in 2009 ,192370 new cases of invasive breast cancer were diagnosed along with 62280 new cases of insitu cancer.[9] For long time it was believed that the incidence is higher in older women but these facts have to be reviewed, there is an increase in the incidence among women under 30 years in the last 10 years.[10]

In the recent years Iraqi people had been exposed to different harmful psychological events that had their obvious effect on many serious illnesses including breast cancer.

Aim of the study:

1. To estimate the prevalence of breast cancer during years (2004-2010)

2. To estimate the effect of risk factors on the occurrence of Breast cancer, especially the effect of stressful life events in Iraq

PATIENTS AND METHODS:

A retrospective cross sectional study was done in Al-Kadhymia Teaching Hospital during the period from June 2004 to June 2010. During these years a total number of 196 patients, all of them were diagnosed to have breast malignancy, and they underwent mastectomy. After history and thorough clinical examination confirmed by histopathological examination ,special attention was given to risk factors age, gender, diet and weight, family history and history of stressful life event like loss of close relative , loss of home due to forceful and sectorian migration after 2003according to data sheet enclosed with this thesis Analysis of these risk factors and their significance had been done for all patients.

Ethical approval and permission:

1. Permissions obtained from Ministry of Health by official letters directed to the authorities of Al-Kadhymia Teaching Hospital.

2. Conduction of the study had been approved by the ethical committee at Iraqi Council of Medical Specializations.

Statistical analysis:

The data were entered into Microsoft Excel. Then they were loaded into Statistical Package for Social Sciences (SPSS) software (version 23). For descriptive analysis categorical variables were presented as frequencies and percentages. Pearson Chi square test has been used.
P-value level of < 0.05 was considered for significant association.

RESULTS:

A total of 196 patients who had breast cancer and had mastectomy from 2004-2010, there was significant increase in the number of operations of mastectomy when comparing 2004 with 2010, the highest number was noticed in the years 2009 and 2010 (36%) and (44%) respectively compared to 10% in 2005. As in figure 1
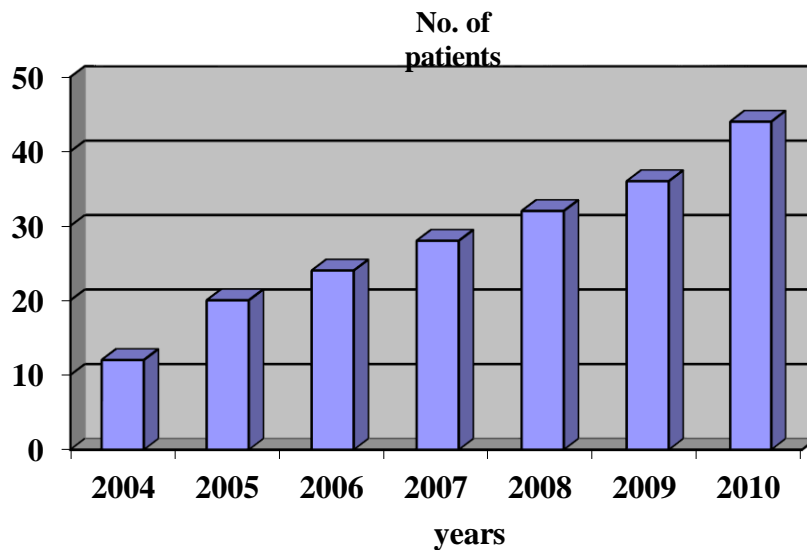
Figure: 1. No. of mastectomy cases over the years of study

Table: 1. shows the total no. of operations had been done during years of study (2004-2010) and the percentage of mastectomy from the total no. of operations

Year	Total No. of operations	No. of Mastectomy	%	P value
2004	1406	12	0.85	
2005	1590	20	1.2	
2006	1413	24	1.69	
2007	1645	28	1.7	0.0005
2008	1695	32	1.89	
2009	1723	36	2.0	
2010	1955	44	2.25	
Total	11427	196	1.71	

Regarding risk factors:

AGE, ranging from 20 to 70 years, the highest percentage (34%) of patients were in the age group (41-50 y) (table 2)

Table: 2. Distribution of patients by age over the years of study.

Year	Total No.& %	age <30 yr.	age 31-40yr.	age 41-50yr.	age 51 -60yr.	age > 60yr.
2004	12(6%)	0	2	5	4	1
2005	20(10%)	2	4	7	6	1
2006	24(12%)	2	7	9	4	2
2007	28(14%)	4	8	9	5	2
2008	32(16%)	3	10	11	6	2
2009	36(18%)	4	12	11	6	3
2010	44(22%)	3	13	15	8	5
Total	196(100%)	18(9%)	56(29%)	67(34%)	39 (20%)	16 (8%)

Regarding gender only 4 patients were males about 2% as in (table 3)

Table: 3. Distribution of patients by gender over the years of study.

Year	Total No.& %	Male	Female
2004	12(6%)	0	12
2005	20(10%)	0	20
2006	24(12%)	0	24
2007	28(14%)	1	27
2008	32(16%)	1	31
2009	36(18%)	0	36
2010	44(22%)	2	42
Total	196(100%)	4(2%)	192(98%)

Regarding parity: 8% of patients were nilipara, while 56.2% had less than 5 children and 35.8% had more than 5 , so there is a statistical significant association between parity and occurrence of breast cancer (table 4)

Table: 4. Distribution of female patients by according to parity

Parity	Total No.	%	P value
Nilipara	16	8	
<5	108	56.2	0.0002
≥5	68	35.8	
Total	192*	100	

*. (Male patients were excluding)

OBESITY: 59% of patients with BMI >25(117case) at the time of presentation where there is a statistical significant association between obesity and breast cancer as in (table 5)

Table: 5. Distribution of patients by (BMI).

BMI kg/m^2	No. of patients	percentage	P value
≥ 25	117	59%	
> 30	60	31%	0.0001
< 25	19	10%	
Total	196	100%	

STAGE OF PRESENTATION:
(table 6) shows that: 50.5 %(99) case were at stage 2, 24.5 %(48case) were at stage 1, 20 %(39case) were at stage3 and 5 %(10cases) were at stage IV

Table: 6. Distribution of patients by stage of breast cancer

| Stage of breast cancer	No. of patients	percentage	P value
Stage I	48	24.5%	
Stage II	99	50.5%	
Stage III	39	20%	0.0002
Stage IV	10	5%	
Total	196	100%	

HISTOPATHOLOGY : (table 7) shows that: 162 case (83%) had ductal carcinoma 30 case (15%)lobular carcinoma 4 cases (2%) other types

Table: 7. Distribution of patients with breast cancer by type of histopathology

Type of histopathology	No. of patients	percentage	P value
Ductal carcinoma	162	83%	
lobular carcinoma	30	15%	0.0002
Other types	4	2%	
Total	196	100%	

STRESSFUL LIFE EVENTS:
a definite history of stress of life was linked to 120 cases (61%) especially loss of close relative and loss of home due to sectarian migration that occurred in the years 2005 and 2006: (figure 2)
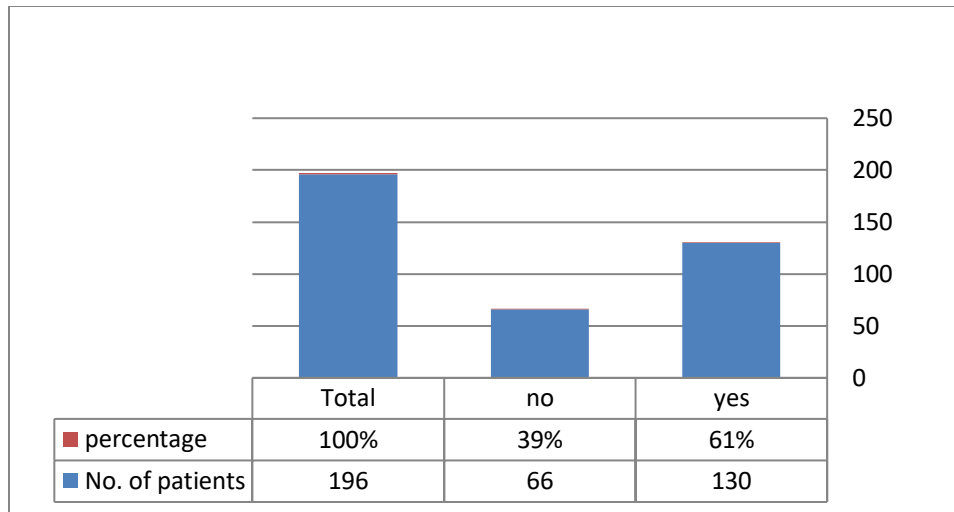
Figure: 2. Distribution of patients with breast cancer according to the presence of stress

FAMILY HISTORY: 184 patients (94%) gave history of breast cancer in a1st degree relative where there is a high statistical association: (table 8)

Table: 8. Distribution of patients with breast cancer according to family history

Family history	No. of patients	percentage	P value
yes	184	94%	
no	12	6%	o.ooo
Total	196	100%	

MENSTRUAL HISTORY:

139 case (72.4%) were menarche less than 15 and 53 cases (27, 6%) were more than 15: (table) 9

Table: 9. Distribution of patients with breast cancer according to the history of menarche

Age of menarche	No. of patients	percentage	P value
<15	139	72.4%	
≥15	53	27.6%	0.00
Total	192*	100%	

*. (Male patients were excluding)

DISCUSSION:

Carcinoma of breast remains the most prevalent form of malignancy in females, it is the second leading cause of death in Europe.[12] Adult women of all ages are at risk with increasing incidence in young age groups In 1970 the chance of developing breast ca among USA females was 1:13 in 1980 it was 1:11 and in 1990 it was 1:8 [9] Germany had the highest mortality of ca breast 29.19 patients per 100000 populations(11-12)while Japanese have the lowest incidence 3.7 per 100000 population [4] Generally its estimated that 332,000 new cases diagnosed in the countries of European union in2008 and 182,460 occur in USA each year.[10] In the current study there was increase in the number of mastectomy operation from20 case during 2005 to 44 case in 2010. The changes that have been noticed in the incidence and the age of presentation of breast ca in Iraq could not be attributed only to the usual risk factors .it is believed

that stressful life events might be more significant trigger for development of breast cancer.[13] This study was done over a stressful period in Iraq, characterized by war and the disasters that occurred after the year 2003. These events put a sever burden on Iraqi people so we propose (as suggested by previous workers in the field in other countries which were subjected to similar events) that stressful life conditions might be the cause of increased incidence of breast cancer .[14]A study done by Geetha Etal in china suggested that psychological stress is associated with increased oxidant production and oxidant damage was found in breast tissue of the affected women.[15] In the current study the number of operations of mastectomy has been increased steadily which reflects an increased number of breast cancer in our population More than 60%of patients in our study were overweight which could be due to the shift to western type of food after 2003 In the Western World there is some evidence that there is a link between the disease and certain types of food low in phytoestrogens .A high intake of alcohol is associated with increased risk of development of breast cancer, in this study no one of studied patient gave history of alcohol intake.[16] In Pakistan in which there is a war like condition there was increased incidence in certain malignancies especially breast cancer [17] According to a study done in Poland it was found that women with major life stress had a3.7 time's higher risk for breast ca than others. [6] According to the American journal of epidimiology in which there was a study on job stress and its relation to breast ca development in which they found that chronic stress has been associated with depressed immune response that may promote cancer development.[7]

Selyes stress theory states that there are two distinct forms of stress, negative stress or distress and positive stress or eustress .stressful events (distress) increase the level of stress hormones such as cortisol and catecholamine.[18]. High levels of endogenous estrogens are strongly associated with increased breast ca risk among post-menopausal women [19] Stress might also promote cancer through DNA damage, faulty DNA repair, inhibition of apoptosis.[20, 21, 22] The risk for women who migrate from low risk to high risk countries typically increases suggesting a strong effect of life style or environmental factors for example Japanese migrants to the USA experience rapidly increasing breast cancer risk.[23] According to British Medical Journal, the age of presentation in UK occur in women aged 50yrsand over81%of cases,[24]while in our study the mean age was 45with increasing incidence in the 3rd decade In Europe it was found that breast ca incidence is higher in the most affluent groups in society [25]while most of patients in our study were housewives who lived in intermediate and low socioeconomic state In the current study,

regarding the stage of presentation, 51% were at stage 2 Regarding the histopathological type, 83%of our patients had invasive ductal carcinoma.

CONCLUSION:

The definite rise in number and the decreased age of presentation of breast cancer could be due to increasing stressful life conditions affecting Iraqi population, There are statistical significant association between occurrence of breast cancer and parity, obesity, stressful health event, family history, age of menarche.

RECOMMENDATIONS:

1. Planning and implementing education programs for women regarding breast cancer.
2. Further studies on this topic in other governorates in Iraq are necessary.
3. Increase the number of specialized centers for early detection of breast cancer, and improve the quality of services in order to decrease the financial burden on the patient.
4. More researches are needed to identify the prevalence of disease in Iraq.

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